

REMARKS/ARGUMENTS

The Office Action mailed July 27, 2005 has been reviewed and carefully considered. Claims 2 and 7 are canceled. Claims 1, 3, 4, 8-18 and 22-24 have been amended and claim 25-28 are added. Claims 1, 3-6 and 8-28 are pending in this application, with claims 1, 6, and 25 being the only independent claims. Reconsideration of the above-identified application, as herein amended and in view of the following remarks, is respectfully requested.

Claims 1-2 and 6 stand rejected under 35 U.S.C. §102 as anticipated by U.S. Patent No. 6,108,436 (Jansen).

Claims 3-4 and 22-23 stand rejected under 35 U.S.C. §103 as unpatentable over Jansen in view of U.S. Patent No. 5,546,859 (Hern).

Claim 5 stands rejected under 35 U.S.C. §103 as unpatentable over Jansen in view of U.S. Patent No. 5,363,174 (Magde).

Claim 8-9 and 16 stand rejected under 35 U.S.C. §103 as unpatentable over Jansen in view of U.S. Patent No. 6,061,144 (Mamizuka).

Claims 10-15 stand rejected under 35 U.S.C. §103 as unpatentable over Jansen in view of Mamizuka and U.S. Patent No. 5,856,876 (Sasanuma).

Claims 17-21 stand rejected under 35 U.S.C. §103 as unpatentable over Jansen in view of Mamizuka and U.S. Patent No. 5,289,000 (Toyofuku).

Claim 24 stands rejected under 35 U.S.C. §103 as unpatentable over Jansen in view of Hern and Magde.

The present invention relates to a device to the scanning of measurement objects on a printed material to determine the optical density of the scanned object. To determine when to scan, the present invention first detects a reference object 20 using a measurement object 14'. The

reference object 20 is arranged at a defined distance from the measurement objects 17. After the reference object 20 is detected, then the scanning apparatus is triggered to scan the measurement objects 17 at the predefined position using the other measurement objects 14 (page 10, lines 18-20; and page 11, lines 8-11).

A typographical error in the specification is corrected by the present amendment in that the reference character 14' on page 8, line 14 is changed to reference character 14.

Independent claim 1 is amended to clarify that that the sensor is moved to scan the measurement object and that the sensor is activated in response to a detection of the reference object. Independent claim 1 now recites "to scan the at least one measurement object, the movement of the at least one sensor means being activated responsive to a detection of the reference object".

Jansen fails to disclose, teach or suggest this limitation. Jansen is directed to a system for controlling registration of the different colors of a multicolor print. According to Jansen, a plurality of marks 21-26 are printed on a printing material and an image recording means 14 such as a digital or CCD camera 36 monitors the location of the colors (see col. 4, lines 36-44, of Jansen). Since Jansen teaches that a camera is used to monitor the location of the marks 21-26, Jansen fails to teach or suggest that the marks have to be scanned by moving a sensor. Rather, the sensor of Jansen is a camera which merely takes a picture of the markings 21-26. In the rejection of dependent claim 2, which is now incorporated in independent claim 1, the Examiner states that the transverse movement is disclosed by Fig. 5b and col. 4, lines 6-8 and 32-35. However, these portions of the Jansen reference merely refer to the arrangement of the marks. There is no disclosure, teaching, or suggestion that a sensor is moved to scan the reference marks.

In addition, Jansen also fails to disclose that the scanning of the marks is activated in response to the detection of a registration object. Rather, the monitoring means 14 of Jansen takes an image of the reference marks 21-26 at a predetermined time at which the marks are predicted to be in the field of the camera (see col. 5, lines 8-34 of Jansen). Only during processing of the is one of the marks is determined to be a reference (see col. 3, line 60 to col. 4, line 5). Since all of the marks, including the reference mark, are imaged simultaneously, Jansen fails to disclose, teach, or suggest "the movement of the at least one sensor means being activated responsive to a detection of the reference object", as expressly recited in independent claim 1.

In view of the above amendments and remarks, it is respectfully submitted that independent claim 1 is allowable over Jansen.

Independent claim 6 recites "at least one of said measurement heads being operative to detect said reference object during a printing process, remainder ones of said measurement heads being activatable to detect and scan said at least one measurement object during the printing process, said remainder ones of measurement heads being activated responsive to said reference object detection". Accordingly, independent claim 6 requires that the reference object is detected before activation of the measurement head for scanning the measurement objects.

As stated above, Jansen discloses that an image of the reference marks 21-26 is obtained by a digital or CCD camera in one image or print. The reference object is then selected after the image is taken. Accordingly, Jansen fails to disclose, teach, or suggest "said remainder ones of measurement heads being activated responsive to said reference object detection", as

expressly recited in independent claim 6. Accordingly, it is respectfully submitted that independent claim 6 is allowable over Jansen.

New independent claim 24 recites "scanning, during the printing process, the at least one measurement object with at least one sensor in response to the detection of the reference object in said step of detecting". As explained above, Jansen discloses a camera that takes an image of an arrangement of marks and fails to disclose, teach, or suggest that a scanning of the marks is activated after the reference mark is detected. Rather, Jansen discloses that all the marks are imaged simultaneously. Accordingly, independent claim 24 is also allowable over Jansen for these reasons.

Dependent claims 3-5, 8-24, and 26-28, each being dependent on one of independent claims 1, 6, and 24, are allowable for at least the same reasons as are independent claims 1, 6, and 24, as well as for the additional recitations contained therein.

Dependent claims 4, 8-18, and 22-24 are amended to correct minor informalities and to make the claims consistent with the independent claims.

New dependent claim 26 recites "wherein said step of scanning comprising moving the at least one sensor along a coordinate direction approximately transversely of a transport direction of the printing medium". This limitation is based on original claim 2. As stated above Jansen fails to disclose that the sensor moves at all.

New claim 27 recites that the step of scanning "is triggered by a control electronics unit with a predetermined time-delay signal in response to the detection of the reference object in said step of detecting, the time delay of the time-delay signal being functionally dependent on a predetermined distance between the reference object and the measurement object". This limitation is based on original claim 24. The Examiner alleges that

the control electronics are found in Jansen. However, Jansen fails to disclose, teach, or suggest that the sensors are activated after a reference object is detected as described above.

New claim 28 recites that "the printing medium is carried on a printing roll, said method further comprising detecting an angle of rotation of the printing roll, wherein the predetermined time delay is dependent on a predetermined angle of rotation". The Examiner states that Hern discloses a determining an angle of rotation. However, neither Jansen nor Hern disclose implementing the predetermined angle of rotation to effect a predetermined time delay to activate scanning of a measurement object, as recited in the claim.

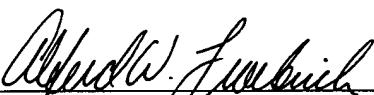
In view of the above amendments and remarks, it is respectfully submitted that the application is in condition for allowance and notice to that effect is solicited.

It is believed that no fees or charges are required at this time in connection with the present application. However, if any fees or charges are required at this time, they may be charged to our Patent and Trademark Office Deposit Account No. 03-2412.

Respectfully submitted,

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